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Flying Waivers For History Of Angioplasty And Myocardial Infarction

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13. ABSTRACT *(Maximum 200 words)*

Angioplasty has become common for the treatment of significant coronary disease (SCAD). In many cases an aeromedically significant lesion (50% or greater stenosis) may be dilated to less than 50%, raising the question of whether these patients could be considered under minimal coronary artery disease (MCAD) criteria, and allowed to fly. Suitability of MCAD to fly is based on a study of ACS patients with 20-40% lesions, who had a annual cardiac event rate of 0.6%. An extensive literature review by AOC presented at ASMA in May 1994 showed that the lowest cardiac event rate, after one year following successful angioplasty, was 2.4% per year with no subsequent decline. A lesion classified as SCAD which is subsequently dilated to less than 50% cannot be considered to be equivalent to MCAD. The Aeromedical Consult Service recommends that aviators who require angioplasty be permanently disqualified from all classes of flying duties.

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DEPARTMENT OF THE AIR FORCE
ARMSTRONG LABORATORY (AFMC)
BROOKS AIR FORCE BASE, TEXAS

14 Feb 95

MEMORANDUM FOR HQ AFMOA/SGPA

FROM: AL/AOCI
2507 Kennedy Circle
Brooks AFB, TX 78235-5117

SUBJECT: Flying Waivers for History of Angioplasty and Myocardial Infarction

1. A 41 year old F-15E instructor pilot developed an anterior wall myocardial infarction at the completion of centrifuge training on 6 Nov 91. Infarction was confirmed by consistent ECG changes and elevated cardiac isoenzymes. The patient was referred to Wilford Hall Medical Center, where thallium scintigraphy showed significant reversible ischemia. At catheterization, ventriculography showed an ejection fraction of 55-60%, and coronary angiography demonstrated a 95% stenosis of the left anterior descending artery. On 16 Dec 91, he underwent percutaneous transluminal coronary angioplasty (PTCA) with reportedly good results, though the amount of residual stenosis is not noted. Since then he has been asymptomatic, and thallium scans have been normal; the most recent one noted was performed 25 May 93. He has been maintained on aspirin 325 mg per day and pravastatin 40 mg per day, and has reportedly remained abstinent from tobacco.

2. Patients with minimal coronary artery disease (MCAD), defined aeromedically as a maximal stenosis of no more than 40% with an aggregate of all lesions no greater than 120%, are allowed to fly non-high performance aircraft on a categorical waiver. The most recent definition of MCAD is based on a consultation service review presented in March 93, in which aviators with 30 and 40% stenotic lesions had an annual cardiac event rate of 0.6%, while those with 50% stenoses had a 2.9% annual event rate, well above the accepted upper event rate of 1% per year. There has been a tendency to view the aviator with a significant, i.e. 50% or greater, lesion which has been dilated to less than 50% as equivalent to the MCAD population, especially once the early restenosis period has passed. In at least one case, a categorical waiver has been granted on this basis.

3. To better answer this question, the ACS reviewed the English literature from 1978 to 1993, and presented the conclusions at the annual meeting of ASMA on 8 May 94. The lowest reported incidence of late adverse outcomes was 2.4% per year, with no decline in occurrence over five years. An outcome was defined as late if it occurred more than one year after successful PTCA; adverse outcomes were defined as cardiac death, myocardial infarction, or the need for repeat PTCA or bypass surgery. Potentially favorable subcategories, such as angioplasty of a single vessel, or residual stenosis of less than 30%, did not predict an acceptably lower risk of subsequent events, and noninvasive testing did not prove to be reliable in detecting silent progression or restenosis.

4. A U.K. cardiologist who serves as consultant in cardiology to the CAA also reviewed the available literature and arrived at the same conclusion. He stated as his personal opinion that patients who had PTCA should not be allowed to fly commercial aircraft. He was at pains to point out that this was his personal opinion, since the CAA, like the FAA, had decided to allow licensure after angioplasty. It is unclear how this decision was reached, since the CAA also uses the "1% rule" as the reference standard in determining fitness to fly.

5. In the specific case under discussion, the fact that the patient has infarcted before is of further concern. His lesion was unstable enough to presumably fissure and thrombose, and dilation of such a lesion is unlikely to affect its friability. Indeed, this may represent another reason why a 90% lesion dilated to a 20% residual stenosis does not behave like a 20% "virgin" lesion.

6. In summary, the most optimistic series of patient outcome following PTCA found that the event rate one year out from angioplasty was 2.4% per year, with no decline in this rate over five years. This is incompatible with military aviation. We recommend that this individual be disqualified from all classes of flying duties, and that this should be the consistent policy applied to angioplasty cases at this time.

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